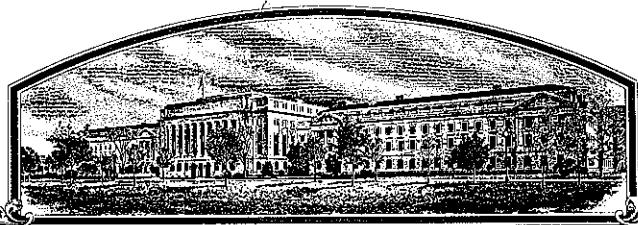


No.



9200193

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Pioneer Hi-Bred International, Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF - *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT OF 1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9062'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 30th day of September in the year of our Lord one thousand nine hundred and ninety-four.

Attest:

*Kenneth H. Evans*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Ulie Esch*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) <b>Pioneer Hi-Bred International, Inc.</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.	3. VARIETY NAME <b>9062</b>
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) <b>700 Capital Square 400 Locust Street Des Moines, IA 50309</b>		5. PHONE (include area code) <b>515-270-3414</b>	<b>FOR OFFICIAL USE ONLY</b> PVPO NUMBER <b>9200193</b> F I L I N G Date <b>May 20, 1992</b> Time <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M. F E E S Filing and Examination Fee: \$ <b>2150.-</b> Date <b>May 14, 1992</b> Certificate Fee: \$ <b>250.-</b> Date <b>Sept. 16, 1994</b>
6. GENUS AND SPECIES NAME <b>Glycine max</b>	7. FAMILY NAME (Botanical) <b>Leguminosae</b>		
8. CROP KIND NAME (Common Name) <b>Soybean</b>	9. DATE OF DETERMINATION <b>September 1987</b>		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) <b>Corporation</b>			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>Iowa</b>		12. DATE OF INCORPORATION <b>1926</b>	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS <b>James E. Miller, Ph.D.</b> <b>7301 NW 62nd Ave., P.O. Box 85</b> <b>Johnston, IA 50131-0085</b> <b>Mike Roth (copy)</b> <b>700 Capital Square, 400 Locust Street</b> <b>Des Moines, IA 50309</b>			

PHONE (include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety.

b. ☒ Exhibit B, Novelty Statement.

c. ☒ Exhibit C, Objective Description of Variety.

d. ☒ Exhibit D, Additional Description of Variety.

e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office **5-15-92**

g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)  
☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?  
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?  
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.  
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: \_\_\_\_\_.)  
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?  
☐ YES (If "YES," give names of countries and dates)  
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)] <b>James E. Miller</b>	CAPACITY OR TITLE <b>Director, Worldwide Soybean Research</b>	DATE <b>5-8-92</b>
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE

**Exhibit A: Origin and Breeding History**

- 1985 (Spring) Cross was made between 9061 and an experimental line Y5004Z1 (later released as 9181). Cross (population) number was 3916.
- 1985 to 1986 Population 3916 was advanced by modified single seed descent using nurseries in Kekaha, HI and Cedar Falls, IA.
- 1986 An F4 bulk of population 3916 was planted in Cedar Falls, IA. Single plants were selected and individually threshed.
- 1987 F5 progeny rows were grown in Redwood Falls, MN. Progeny row no. 5532 was selected and designated "3916F07".
- 1988 Preliminary yield trials (RFD01500-18) were initiated in Minnesota. Based upon yield performance, the line was advanced to wide area elite trials in 1989. Single plants were pulled from a bulk of the line grown in Kekaha, HI.
- 1989 First year in wide area tests (designated "W3916F07", tests: RFA0L000, CFA00000). Purification rows derived from single plants harvested in 1988 were grown and offtype sublines discarded.
- 1990 Second year in wide area tests (designated "Y3916F07", tests: RFA0L000, CFA00000, and NPA0L000). A 5.4 acre purification block was grown from sublines harvested in 1989.
- 1991 Third year in wide area testing (designated "XB07B", tests: RFA0L000, CFA00000, and NPA0L000). Parent Seed assumed responsibility for line maintenance.

**Exhibit B:** Variety 9062 is most similar to 9061, L0780, and S06-57. 9062 differs from 9061 in that it is resistant to Phytophthora race 3 while 9061 is not. 9062 differs from L0780 in that it has purple flowers; L0780 has white flowers. 9062 differs from S06-57 in that 9062 has significantly better lodging resistance (Table 1).

9200193

EASYLINK 0255455L001 10AUG94 09:03/09:03 EST  
FROM: 478327 PIOSEED DMS  
333439 PIONEER HIBRED  
PIONEER DATA SYSTEMS (CRN: NONE)  
TO: 3015045291

PIONEER HI-BRED INTERNATIONAL, INC.  
PLANT BREEDING DIVISION

7301 NW 52nd AVENUE  
P.O. BOX 85  
JOHNSTON, IA 50131

FAX TRANSMISSION

TO: Jeffrey L. Strachan

FAX NO: (301) 504-5291

PHONE NO: (301) 504-5489

FROM: John Grace

FAX NO: (515) 253-2221

PHONE NO: (515) 270-3582

DATE: August 10, 1994

TOTAL PAGES TRANSMITTED (INCLUDING THIS SHEET): 1

If you have any problems with this transmission or do not receive  
all pages, please call 515-270-3582 as soon as possible.

## COMMENTS:

Addition to Exhibit A of FVP Application 9200193, '9062' (August,  
1994).

Variety 9062 has undergone extensive testing from 1988 to 1993, and  
has been observed to be stable for all plant traits from generation to  
generation.

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
 PLANT VARIETY PROTECTION OFFICE  
 BELTSVILLE, MARYLAND 20705

EXHIBIT C  
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Pioneer Hi-Bred International, Inc.	TEMPORARY DESIGNATION	VARIETY NAME 9062
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 700 Capital Square 400 Locust Street Des Moines, IA 50309		FOR OFFICIAL USE ONLY PVPO NUMBER 9200193

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., ). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

## 1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)  
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

## ★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow      2 = Green      3 = Brown      4 = Black      5 = Other (Specify) \_\_\_\_\_

## 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')      2 = Shiny ('Nebsoy'; 'Gasoy 17')

## ★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

## ★ 5. HILUM COLOR: (Mature Seed)

1 = Buff      2 = Yellow      3 = Brown      4 = Gray      5 = Imperfect Black      6 = Black      7 = Other (Specify) \_\_\_\_\_

## ★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow      2 = Green

## ★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low      2 = High

## ★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)      2 = Type B (SP1<sup>b</sup>)

## ★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')      2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')  
 3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')  
 4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

## ★ 10. LEAFLET SHAPE:

1 = Lanceolate      2 = Oval      3 = Ovate      4 = Other (Specify) \_\_\_\_\_

## 11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

9200193

## 12. LEAF COLOR:

☐ 21 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

## ★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

## ★ 14. POD COLOR:

☐ 2

1 = Tan

2 = Brown

3 = Black

## ★ 15. PLANT PUBESCENCE COLOR:

☐ 1

1 = Gray

2 = Brown (Tawny)

## 16. PLANT TYPES:

☐ 21 = Slender ('Essex'; 'Amsoy 71')  
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

## ★ 17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

## ★ 18. MATURITY GROUP:

☐ 3

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

## ★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

★

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 1Bacterial Blight (*Pseudomonas glycinea*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

★

☐ 1Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)

★

☐ 0

Race 1

☐ 0

Race 2

☐ 0

Race 3

☐ 0

Race 4

☐ 0

Race 5

☐

Other (Specify)

☐ 0Target Spot (*Corynespora cassiicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microsphaera diffusa*)

★

☐ 1Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

5

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

9200193

FUNGAL DISEASES: (Continued)

- ★ ☒ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☒ 1 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☒ 2 Race 1 ☒ 2 Race 2 ☒ 2 Race 3 ☒ 1 Race 4 ☒ 1 Race 5 ☐ 0 Race 6 ☒ 2 Race 7
- ☒ 2 Race 8 ☒ 2 Race 9 ☒ 2 Other (Specify) Races 10, 13, 17

VIRAL DISEASES:

- ☒ 1 Bud Blight (Tobacco Ringspot Virus)
- ☒ 1 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☒ 1 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☒ 1 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☒ 1 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☒ 1 Race 3 ☒ 1 Race 4 ☐ Other (Specify) \_\_\_\_\_
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ 0 OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☒ 1 Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify) \_\_\_\_\_

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) \_\_\_\_\_

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	9061	Seed Coat Luster	9061
Leaf Shape	9061	Seed Size	Dawson
Leaf Color	9061	Seed Shape	9061
Leaf Size	9061	Seedling Pigmentation	9061
			6

## 23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

9200193

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
9062 Submitted	114.6	1.5	74			40.5	21.3	14.8	
9061 Name of Similar Variety	113.9	1.5	72			39.4	22.4	14.0	

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.



**Exhibit D:** In Exhibit C we have identified 9062 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle, seed mottle, and iron chlorosis. This does not mean that 9062 is any worse for these problems than other varieties of similar maturity. Rather, we do not consider 9062 to be immune to these problems. Therefore, we have chosen to be conservative and have identified the line as 'susceptible'.

A concern is that this will lead to incorrect classification of varieties based upon characteristics open to interpretation. However, we are attempting to submit forms which are as complete and accurate as possible.

Some applicants may not view the term 'resistance' as equivalent to the term 'immunity'. Similarly, some may not view 'susceptibility' as the utter failure of a variety under applicable conditions. It would be most helpful if resistant and susceptible varieties could be identified. If standards are known, then the terms 'resistant' and 'susceptible' have a consistent meaning to all applicants.

Table 2. Isozyme information for 9062

<u>ACO2</u>	<u>ACO3</u>	<u>ACO4</u>	<u>ACP</u>	<u>DIA</u>	<u>ENP</u>	<u>IDH1</u>	<u>IDH2</u>	<u>MDH</u>	<u>MPI</u>	<u>PGM</u>	<u>PHI</u>
2	1	1	A	B	A	1	2	B	A	1	1

9062 is a mid group 0 variety. If group 0 maturities are divided in tenths, the relative maturity for 9062 is 0.6.

**Exhibit E:** Pioneer Hi-Bred International, Inc. is the sole, original, and first breeder of soybean variety 9062, for which it solicits a certificate of protection.

Table 1. Variety 9062 vs S06-57 for lodging.

All observations are from plots planted using a randomized complete block design. Planted plot length was 21 feet, trimmed to 15 feet. Plot width was 4 30 inch rows, or 10 feet. Lodging was scored on a 1 to 9 scale. On this scale a score of 1 means all plants are completely procumbent, while a score of 9 means all plants were completely upright. All data was taken in 1991.

REP	X1 9062	X2 S06-57	X1-X2	(X1-X2)**2	
1	7	4	3	9	SD**2= (33 - (11**2 / 4)) / (4 * 3)
2	9	7	2	4	SD**2= 0.22917
3	9	7	2	4	SD= 0.47871
4	9	5	4	16	t = (11/4)/0.47871
					t = 5.74456 ** significant 5% level
					DF= 3
					n= 4
sum	34	23	11	33	ave lodging for 9062 = 8.5
ave	8.5	5.75	2.75		ave lodging for S06-57= 5.75

Other varieties that are less similar:

Variety	Difference
Dassel	Dassel is resistant to race 4 of Phytophthora, 9062 is not
Ozzie	9062 is resistant to race 3 of Phytophthora, Ozzie is not
9091	9062 is resistant to race 3 of Phytophthora, 9091 is not
B095	9062 is resistant to race 3 of Phytophthora, B095 is not
9181	9181 is 10 to 14 days later maturing than 9062
A0949	A0949 has white flowers, 9062 has purple flowers
DSR-066	DSR-066 has a black hilum, 9062 has a yellow hilum
DSR-128	DSR-128 has a buff hilum, 9062 has a yellow hilum
Evans	Evans has white flowers, 9062 has purple flowers
Glenwood	Glenwood has an imperfect black hilum, 9062 has a yellow hilum
J-081	J-081 is susceptible to race 1 Phytophthora, 9062 is resistant
S09-70	S09-70 has low peroxidase activity, 9062 has high activity
OAC Musca	9062 is resistant to race 7 of Phytophthora, OAC Musca is not